

TRANSLATION

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference TU04-1005WO1	FOR FURTHER ACTION	See Form PCT/IPEA/416
International application No. PCT/JP2004/015777	International filing date (<i>day/month/year</i>) 25.10.2004	Priority date (<i>day/month/year</i>) 19.11.2003
International Patent Classification (IPC) or national classification and IPC C23C14/34, C22B3/00, 9/10, 9/22, C22C27/00		
Applicant NIKKO MATERIALS CO., LTD.		

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of <u>5</u> sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising: a. <input checked="" type="checkbox"/> (<i>sent to the applicant and to the International Bureau</i>) a total of <u>1</u> sheets, as follows: <input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions). <input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box. b. <input type="checkbox"/> (<i>sent to the International Bureau only</i>) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).
4. This report contains indications relating to the following items: <input checked="" type="checkbox"/> Box No. I Basis of the report <input type="checkbox"/> Box No. II Priority <input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability <input type="checkbox"/> Box No. IV Lack of unity of invention <input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement <input type="checkbox"/> Box No. VI Certain documents cited <input type="checkbox"/> Box No. VII Certain defects in the international application <input checked="" type="checkbox"/> Box No. VIII Certain observations on the international application

Date of submission of the demand	Date of completion of this report
Name and mailing address of the IPEA/JP	Authorized officer
Facsimile No.	Telephone No.

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/JP2004/015777

Box No. I

Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language _____, which is the language of a translation furnished for the purposes of:
- ☐ international search (Rule 12.3 and 23.1(b))
- ☐ publication of the international application (Rule 12.4)
- ☐ international preliminary examination (Rule 55.2 and/or 55.3)
2. With regard to the **elements** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:
- ☐ the international application as originally filed/furnished
- ☒ the description:
- pages 1-10 as originally filed/furnished
- pages* _____ received by this Authority on _____
- pages* _____ received by this Authority on _____
- ☒ the claims:
- nos. _____ as originally filed/furnished
- nos.* _____ as amended (together with any statement) under Article 19
- nos.* 1, 2, 3, 5 received by this Authority on 15.03.2005
- nos.* _____ received by this Authority on _____
- ☐ the drawings:
- sheets _____ as originally filed/furnished
- sheets* _____ received by this Authority on _____
- sheets* _____ received by this Authority on _____
- ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.
3. ☒ The amendments have resulted in the cancellation of:
- ☐ the description, pages _____
- ☒ the claims, nos. 4, 6
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to sequence listing (*specify*): _____
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages _____
- ☐ the claims, nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/JP2004/015777

Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement		
1. Statement			
Novelty (N)	Claims	<u>1, 2, 3, 5</u>	YES
	Claims	<u></u>	NO
Inventive step (IS)	Claims	<u>1, 2, 3, 5</u>	YES
	Claims	<u></u>	NO
Industrial applicability (IA)	Claims	<u>1, 2, 3, 5</u>	YES
	Claims	<u></u>	NO
2. Citations and explanations (Rule 70.7)			
Document 1: JP 2002-105552 A (Nikko Materials Co., Ltd.), 10 April 2002			
Document 2: JP 4-358030 A (Toshiba Corp.), 11 December 1992			
Document 3: JP 7-316681 A (Japan Energy Corp.), 05 December 1995			
Document 4: JP 2003-193150 A (Sumitomo Titanium Corp.), 09 July 2003			
Document 5: JP 4-99829 A (President of The Kyoto University), 31 March 1992			
Document 6: JP 2000-345252 A (Kabushiki Kaisha Sumitomo Sitix Amagasaki), 12 December 2000			
Document 7: JP 2002-206103 A (Nikko Materials Co., Ltd.), 26 July 2002			
Document 8: JP 2003-306728 A (ATI PROPERTIES INC.), 31 October 2003			
Claims 1, 2, 3 and 5			
The high-purity hafnium with an oxygen content that conforms to the range set forth in claim 1, a zirconium content that conforms to the range set forth in claim 1, a sulfur content that conforms to the range set forth in claim 1 and a phosphorous content that conforms to the			

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/JP2004/015777

Box No. V**Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement**

range set forth in claim 1; the target that comprises said high-purity hafnium; the thin film that comprises said high-purity hafnium; and the method for the production of said high-purity hafnium are not disclosed in any of the documents that are cited in the international search report, and would not have been obvious to a person skilled in the art.

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/JP2004/015777

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

As a result of the amendments, the Zr content of the inventions set forth in claims 1 to 3 is reduced to a range of less than 0.1% by weight. However, the high-purity Hf that is produced in example 2 contains 1.5% by weight of Zr; therefore, the example in question is no longer an example of the inventions set forth in the claims in as much as said example goes beyond the scope of the claims as amended. Such being the case, it is necessary to refer to the reference examples and the like.